

CLAIMS

What is claimed is:

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2 A method of switching a packet, the method comprising:
3 computing a tag for the packet;
4 looking up the tag in a table, the table comprised of entries, the entries
5 associating switching information with a tag; and
6 using switching information associated with the tag in the table to switch the
packet if there is an entry for the tag in the table.

1 2. The method of claim 1, wherein the switching further comprises determining
2 the switching information if there is no entry for the tag in the table, and the
3 determining comprising sending the packet to a system with resources for routing a
4 packet and determining switching information.

1 3. The method of claim 2, further comprising updating the table to include an
2 entry for the tag with switching information responsive to the determining.

1 4. The method of claim 2, further comprising including an entry in the table for
2 the tag associated with a switching instruction indicating that packets should be
3 dropped until the determining is complete.

1 5. The method of claim 1, wherein the entries in the table are removed if a the
2 tag corresponding to the entry has not been looked up in a predetermined period.

1 21. The method of claim 18, wherein the hash code generator has a non-zero
2 probability of generating the same tag from different input packets.

1 22. The method of claim 18, wherein the length of the tag is determined by the
2 probability of the hash code generator producing the same hash code from different
3 input packets.

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A4 1 23. A method comprising:

2 computing a tag for a packet;

3 looking up the tag in a table, the table comprised of entries, ^{each of} the entries

4 associating information about the flow with ^a tag;

5 updating information about the flow associated with the tag if there is an

6 entry for the tag;

7 creating a new entry in the table if there is no entry for the tag;

8 removing entries that have not been accessed for a predetermined period

9 from the table.

1 24. The method of claim 23, wherein the creating further comprises storing data
2 extracted from the packet in the entry.

1 25. The method of claim 24, wherein the data includes billing information for the
2 packet.

1 26. The method of claim 24, wherein the packet is sent to a system with
2 resources for analyzing the packet and determining billing information to be
3 associated with the entry for the tag.

1 27. The method of claim 23, wherein the removing further comprises transferring
2 the data associated with a tag to a system with resources for storing information.

1 28. The method of claim 23, wherein the computing further comprises using a
2 mask of bits of the packet as a seed for a hash code generator.

1 29. The method of claim 28, wherein the hash code generator is a pseudo random
2 number generator.

1 30. The method of claim 28, wherein the hash code generator is a shift register
2 with a feedback loop.

1 31. The method of claim 28, wherein the hash code generator has a non-zero
2 probability of generating the same tag from different input packets.

1 32. The method of claim 28, wherein the length of the tag is determined by the
2 probability of the hash code generator producing the same hash code from different
3 input packets.